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EXAMINER	
HALL, COREY JOHN	

ART UNIT	PAPER NUMBER
3743	

NOTIFICATION DATE	DELIVERY MODE
07/11/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/568,382	PAHLSSON ET AL.	
	Examiner	Art Unit	
	Corey J. Hall	3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 March 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 February 2010* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The declaration under 37 CFR 1.132 filed 3/14/2011 is sufficient to overcome the rejection of claims 1-5 and 7-24 based upon indefiniteness as to the requisite degree of "essentially tight" under 35 U.S.C 112, second paragraph.

Response to Arguments

2. Applicant's arguments, see page 10, line 22–page 12, line 13, filed 3/14/2011, with respect to claims 1-5 and 7-24 have been fully considered and are persuasive. The rejection of claims 1-5 and 7-24 has been withdrawn.

3. Applicant's arguments with respect to claim1-5 and 7-24 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "first and second end edges" of the outer and inner circumferential walls must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must

be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claim 24 is objected to because of the following informalities: in line 15 "outer" should be changed to "inner" and for purposes of examination has been treated as "inner". Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-5 and 7-24 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: "The necessary seal is established, for example, by means of a rubber strip" as disclosed in Applicant's specification on page 10, lines 1-2. The Applicant's specification indicates that in order to achieve "a seal" in the horizontal direction a rubber strip is required. In claims 1, 18, and 24 the limitation of essentially tight in the horizontal direction to permit a seal is claimed but omits the essential element of the rubber strip required to achieve the seal.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 1, 2, 4, 5, 7, 10-13, 16, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Onodera (US 4,118,181 previously cited).

10. Regarding claims 1, 2, 4, 5, 7, 10-13, 16, and 24, Onodera discloses an apparatus comprising an endless conveyor belt (40, fig. 1) configured to convey foodstuffs (abstract, line 1) which along part of its length follows a helical path to form a stack (fig. 1 at 40 showing a stack), said helical path defining a central space in the stack (fig. 1), the conveyor belt having passages for letting a flow of a gaseous medium in the vertical (fig. 1 showing vertical flow and fig. 3 showing permeable conveyor belt) as well as horizontal (fig. 1 showing that gaseous medium can flow horizontally) direction through the stack, an end portion of the stack (fig. 1 at 40), in which said stack is vertically surrounded by an encapsulation (fig. 1 and Figure A below) that is essentially tight in the horizontal direction to permit a seal, the encapsulation (fig. 1 and Figure A below) being formed by the co-extension of an outer circumferential wall (fig. 1 and Figure A below) and an inner circumferential wall (fig. 1 and Figure A below) vertically surrounding the end portion of the stack, wherein the outer circumferential wall (fig. 1 and Figure A below showing stationary) and the inner circumferential wall (fig. 1 and Figure A below showing stationary) are stationary during operation of the belt, the encapsulation extending along substantially the vertical distance of one of the inner circumferential wall (fig. 1 and Figure A

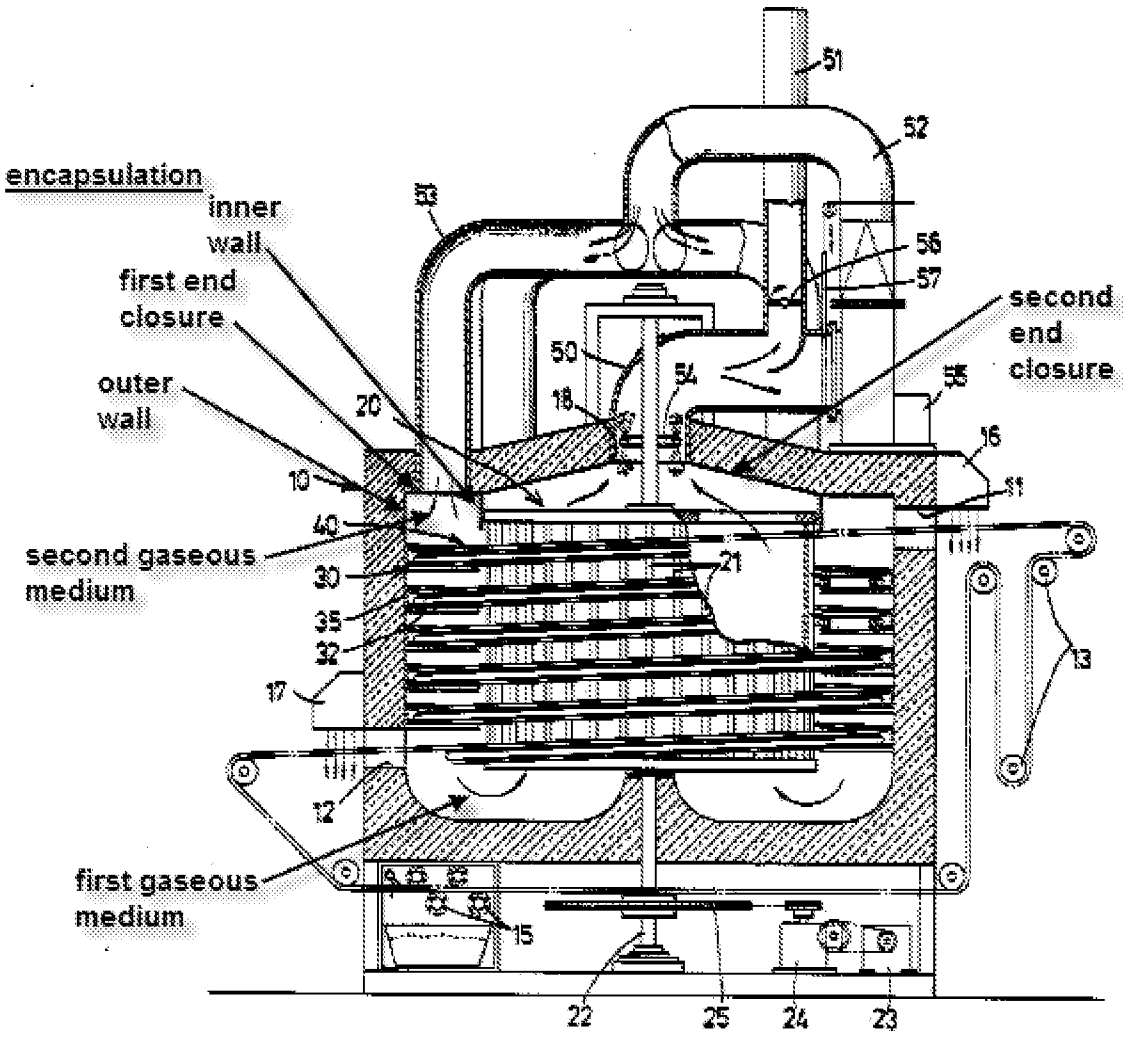
below), a first end closure (fig. 1 and Figure A below) arranged to cover the conveyor belt in its entire helical path, wherein said first end closure (fig. 1 and Figure A below) fits tightly against the outer and inner circumferential walls (fig. 1 and Figure A below) of the encapsulation to permit a seal, a first supply of a first gaseous medium (fig. 1 and Figure A below) to said central space, and a second supply of a second gaseous medium (fig. 1 and Figure A below) to said encapsulation, said encapsulation being arranged to direct the flow of the second gaseous medium (fig. 1 and Figure A below showing vertical flow) in such a manner that it is passed in the vertical direction from said encapsulation (fig. 1 and Figure A below) to the rest of the stack, in which the first gaseous medium is humid water vapor (col. 2, lines 20-31 describing steam and wet air), in which the second gaseous medium is overheated water vapor (col. 2, lines 20-31 describing steam and wet air), in which said encapsulation is arranged at the upper part of the stack (fig. 1), in which a second end closure (fig. 1 and Figure A below) is arranged over the central space, in which a third end closure (fig. 1 showing a third end closure at the bottom) is arranged against the lowermost turn formed in the stack, said third end closure (fig. 1 showing a third end closure at the bottom) being arranged transversely of the central space defined by the conveyor belt (40, fig. 1), in which the source of supply of humid water vapor comprises a fan (55, fig. 1), in which the conveying direction of the conveyor belt is arranged towards the encapsulation (fig. 1 showing the conveyor belt 40 moving from an inlet 12 to an outlet 11, col. 2, line 17), in which the stack is arranged in a housing (10, fig. 1) comprising an inlet (12, fig. 1) and an outlet (11, fig. 1) for the conveyor belt (40, fig. 1), in which said outer circumferential wall extends vertically along the full height of the stack (fig. 1), and said inner circumferential wall extends vertically along a portion of the stack (fig. 1 and where the limitation of "whereby

said outer circumferential wall optionally has openings or perforations along the portion of the stack not covered by the inner circumferential wall" has been treated as optional and therefore not required), an apparatus comprising (a) an endless conveyor belt (40, fig. 1) configured to convey foodstuffs (abstract, line 1) which along part of its length follows a helical path to form a stack (fig. 1 at 40 showing a stack), said helical path defining a central space in the stack (fig. 1), (b) the conveyor belt having passages for letting a flow of a gaseous medium in the vertical (fig. 1 showing vertical flow and fig. 3 showing permeable conveyor belt) as well as horizontal (fig. 1 showing that gaseous medium can flow horizontally) direction through the stack, (c) an end portion of the stack being surrounded by an encasement (fig. 1 and Figure A below at encapsulation) being essentially tight in the horizontal direction, said encasement comprising: (i) an outer circumferential wall (fig. 1 and Figure A below) with first and second end edges, wherein the first end edge (fig. 1 and Figure A below showing a first end edge at the bottom of the outer circumferential wall) is essentially tight in the horizontal direction against the stack to permit a seal, and wherein the outer circumferential wall (fig. 1 and Figure A below) is stationary during operation of the belt, (ii) an inner circumferential wall (fig. 1 and Figure A below) with first and second end edges, wherein the first end edge (fig. 1 and Figure A below showing a first end edge at the bottom of the inner circumferential wall) is essentially tight in the horizontal direction against the stack to permit a seal, and wherein the inner circumferential wall (fig. 1 and Figure A below) is stationary during operation of the belt, and (iii) an end closure (fig. 1 and Figure A below) disposed beyond the portion of the stack defined by the entire helical path of the conveyor belt (40, fig. 1), wherein the end closure (fig. 1 and Figure A below) fits tightly against the second end edges of the outer and inner circumferential walls (fig. 1 and Figure A below) to

permit a seal, (d) a first supply of a first gaseous medium (fig. 1 and Figure A below) to said central space, and (e) a second supply of a second gaseous medium (fig. 1 and Figure A below) to said encasement (fig. 1 and Figure A below), said encasement being arranged to direct the flow of the second gaseous medium (fig. 1 and Figure A below showing vertical flow) in such a manner that it is passed in the vertical direction from said encasement (fig. 1 and Figure A below) to the rest of the stack.

Figure A.

FIG.1



11. Claims 1, 5, 7, 10, 12, 13, 18, 22, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Lang (US 5,205,135 previously cited).

12. Regarding claims 1, 5, 7, 10, 12, and 13, Lang discloses an apparatus comprising an endless conveyor belt (15a, fig. 1) configured to convey foodstuffs (abstract, line 1) which along part of its length follows a helical path to form a stack (fig. 3), said helical path defining a central space (fig. 3 at 15c) in the stack, the conveyor belt having passages for letting a flow of a gaseous medium in the vertical (fig. 3 showing vertical flow) as well as horizontal (fig. 3 showing horizontal flow) direction through the stack, an end portion (fig. 3 at 40) of the stack, in which said stack is vertically surrounded by an encapsulation (fig. 3 showing an encapsulation between inner wall 15j and outer wall 37) that is essentially tight in the horizontal direction to permit a seal, the encapsulation being formed by the co-extension of an outer circumferential wall (37, fig. 3) and an inner circumferential wall (15j, fig. 3) vertically surrounding the end portion of the stack, wherein the outer circumferential wall (37, fig. 3 showing the outer wall attached to the housing) and the inner circumferential wall (15j, fig. 3 showing the inner wall attached to the housing) are stationary during operation of the belt, the encapsulation extending along substantially the vertical distance of one of the outer circumferential wall (37, fig. 3), a first end closure (fig. 3 showing a first end closure extending from the enclosure 13a to the fan 23a which guides the air flow 35) arranged to cover the conveyor belt in its entire helical path, wherein said first end closure (fig. 3 showing a first end closure extending from the enclosure 13a to the fan 23a) fits tightly against the outer (37, fig. 3) and inner (15j, fig. 3) circumferential walls of the encapsulation to permit a seal (fig. 3 showing sealing such that air flow 35 only moves in the intended direction), a first supply of a first gaseous medium (29, 31, fig. 3) to said

central space, and a second supply of a second gaseous medium (35, 40, fig. 3) to said encapsulation, said encapsulation being arranged to direct the flow of the second gaseous medium (35, 40, fig. 3) in such a manner that it is passed in the vertical direction (fig. 3 at 40 showing a vertical direction) from said encapsulation to the rest of the stack, in which said encapsulation (fig. 3 between inner wall 15j and outer wall 37) is arranged at the upper part of the stack, in which a second end closure (25, fig. 3) is arranged over the central space, in which a third end closure (15k, fig. 3) is arranged against the lowermost turn formed in the stack, said third end closure (15k, fig. 3) being arranged transversely of the central space (fig. 3 at 15c) defined by the conveyor belt, in which the conveying direction (fig. 1 showing the conveying direction having a lower inlet and a higher outlet) of the conveyor belt (15a, fig. 1) is arranged towards the encapsulation (fig. 1 at 37), in which the stack is arranged in a housing (13, fig. 1) comprising an inlet (fig. 1 showing a lower inlet) and an outlet (fig. 1 showing a higher outlet) for the conveyor belt.

Regarding claims 18 and 22, Lang discloses an method comprising: (a) providing an endless conveyor belt (15a, fig. 1) configured to convey foodstuffs (abstract, line 1) which along part of its length follows a helical path to form a stack (fig. 3), said conveyor belt having passages for letting a flow of a gaseous medium through the stack in the vertical (fig. 3 showing vertical flow) as well as the horizontal (fig. 3 showing horizontal flow) directions, wherein: (i) the stack defining a central space (fig. 3 at 15c), and (ii) the stack comprising a non-encapsulated stack portion (fig. 3 showing a non-encapsulated stack portion) and, adjacent thereto, an encapsulated stack portion (fig. 3 at 40) being encapsulated in the vertical direction by an encapsulation (fig. 3 showing an encapsulation between inner wall 15j and outer wall 37) that is

essentially tight in the horizontal direction to permit a seal, the encapsulation being formed by the co-extension of an outer circumferential wall (37, fig. 3) and an inner circumferential wall (15j, fig. 3) vertically surrounding the encapsulated stack portion, wherein the outer circumferential wall (37, fig. 3 showing the outer wall attached to the housing) and the inner circumferential wall (15j, fig. 3 showing the inner wall attached to the housing) are stationary during operation of the belt, the encapsulation extending along substantially the vertical distance of one of the outer circumferential wall (37, fig. 3), (b) providing a first end closure (fig. 3 showing a first end closure extending from the enclosure 13a to the fan 23a which guides the air flow 35) arranged to cover the conveyor belt in its entire helical path, wherein said first end closure (fig. 3 showing a first end closure extending from the enclosure 13a to the fan 23a) fits tightly against the outer (37, fig. 3) and inner (15j, fig. 3) circumferential walls of the encapsulation to permit a seal (fig. 3 showing sealing such that air flow 35 only moves in the intended direction), (c) supplying a flow of a first gaseous medium (29, 31, fig. 3) to said central space for further conveyance to the non-encapsulated stack portion (fig. 3 showing a non-encapsulated stack portion) through said passages for letting through a flow of a first gaseous medium in the horizontal direction (fig. 3 showing horizontal flow), (d) supplying a flow of a second gaseous medium (35, 40, fig. 3) to said upper encapsulated stack portion, (e) wherein said encapsulation directing the flow of the second gaseous medium (35, 40, fig. 3) in such a manner that it flows in an essentially vertical direction (fig. 3 at 40 showing a vertical direction) from said encapsulated stack portion to said non-encapsulated stack portion, and (f) the flow of the second gaseous medium (35, 40, fig. 3), which enters the encapsulated stack portion (fig. 3 at 40) and flows essentially vertically, affecting the flow of the first gaseous medium (29, 31, fig. 3)

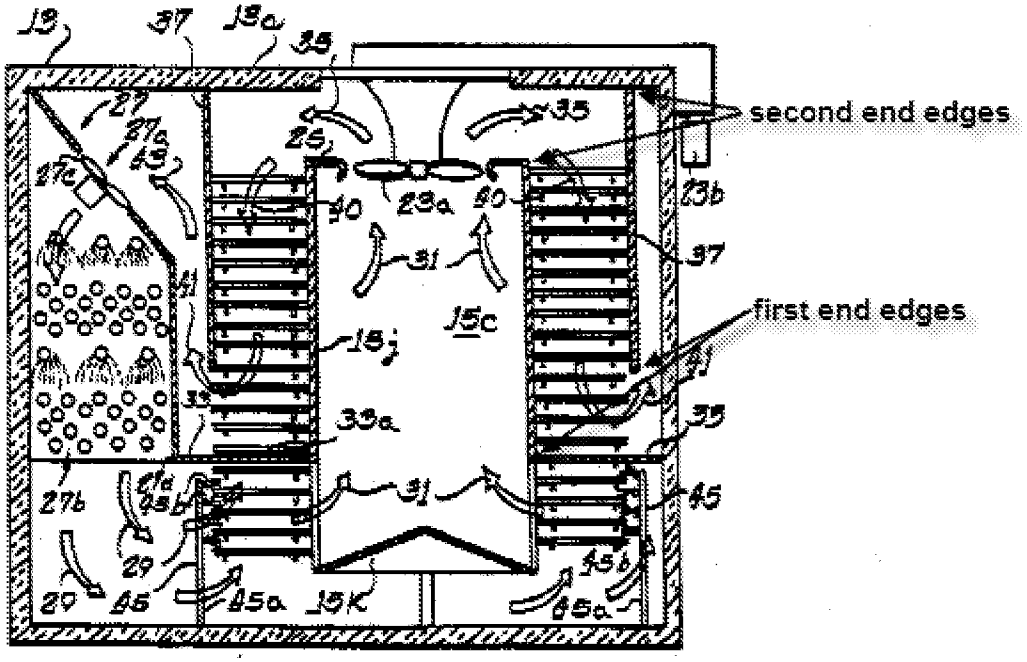
which is conveyed to the non-encapsulated stack portion so that the first gaseous medium (29, 31, fig. 3) is prevented from flowing towards the encapsulated stack portion (fig. 3 at 40), comprising the step of arranging the conveyor belt (15a, fig. 1) in a conveying direction (fig. 1 showing the conveying direction having a lower inlet and a higher outlet) towards the encapsulated stack portion (fig. 1 at 37).

Regarding claim 24, Lang discloses an apparatus comprising (a) an endless conveyor belt (15a, fig. 1) configured to convey foodstuffs (abstract, line 1) which along part of its length follows a helical path to form a stack (fig. 3), said helical path defining a central space (fig. 3 at 15c) in the stack, (b) the conveyor belt having passages for letting a flow of a gaseous medium in the vertical (fig. 3 showing vertical flow) as well as horizontal (fig. 3 showing horizontal flow) direction through the stack, (c) an end portion (fig. 3 at 40) of the stack being surrounded by an encasement (fig. 3 showing an encasement between inner wall 15j and outer wall 37) being essentially tight in the horizontal direction, said encasement comprising: (i) an outer circumferential wall (37, fig. 3) with first and second end edges (fig. 3 and Figure B below), wherein the first end edge (fig. 3 and Figure B below) is essentially tight in the horizontal direction against the stack to permit a seal, and wherein the outer circumferential wall (37, fig. 3 showing the outer wall attached to the housing) is stationary during operation of the belt, (ii) an inner circumferential wall (15j, fig. 3) with first and second end edges (fig. 3 and Figure B below), wherein the first end edge (fig. 3 and Figure B below) is essentially tight in the horizontal direction against the stack to permit a seal, and wherein the inner circumferential wall (15j, fig. 3 showing the inner wall attached to the housing) is stationary during operation of the belt, and (iii) an end closure (fig. 3 showing an end closure extending from the enclosure 13a to

the fan 23a which guides the air flow 35) disposed beyond the portion of the stack defined by the entire helical path of the conveyor belt, wherein the end closure (fig. 3 showing a end closure extending from the enclosure 13a to the fan 23a) fits tightly against the second end edges (fig. 3 and Figure B below) of the outer and inner circumferential walls to permit a seal (fig. 3 showing sealing such that air flow 35 only moves in the intended direction), (d) a first supply of a first gaseous medium (29, 31, fig. 3) to said central space, and (e) a second supply of a second gaseous medium (35, 40, fig. 3) to said encasement, said encasement being arranged to direct the flow of the second gaseous medium (35, 40, fig. 3) in such a manner that it is passed in the vertical direction (fig. 3 at 40 showing a vertical direction) from said encasement to the rest of the stack.

Figure B.

FIG. 3



Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

16. Claims 3 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onodera (US 4,118,181) as applied to claim 1 above, and further in view of Williams (US 4,582,047).

17. In regards to claims 3 and 23, Onodera discloses the claimed invention including in which the source of supply of . . . water vapor comprises a fan (55, fig. 1), except for in which

the first gaseous medium is saturated water vapor. However, Williams teaches in which a first gaseous medium is saturated water vapor ("100% humidity" abstract) in order to provide efficient cooking (abstract) in a system using steam (Onodera, col. 2, lines 20-31 describing steam and wet air). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the Onodera reference, to include in which the first gaseous medium is saturated water vapor, as suggested and taught by Williams, for the purpose of providing efficient cooking in a system using steam. The modification merely involves combining prior art elements according to known methods to yield predictable results. One would be motivated to combine Onodera with Williams because Williams teaches a steam cooking apparatus that uses steam at 100% humidity to provide more efficient cooking and the steam cooking apparatus of Onodera could be similarly improved by using steam at 100% humidity, thus reducing energy use by achieving more efficient cooking.

18. Claims 2-4, 11, 19-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lang (US 5,205,135) as applied to claims 1 and 18 above, and further in view of Williams (US 4,582,047).

19. In regards to claims 2-4, 11, 19-21, and 23, Lang discloses the claimed invention including in which the source of supply . . . comprises a fan (23a, fig. 3), except for in which the first gaseous medium is humid water vapor, in which the first gaseous medium is saturated water vapor and in which the second gaseous medium is overheated water vapor. However, Williams teaches in which a first gaseous medium (33, fig. 1) is humid water vapor ("humidity" abstract), in which a first gaseous medium (33, fig. 1) is saturated water vapor ("100% humidity" abstract), and in which a second gaseous medium (32, fig. 1) is overheated water vapor (abstract

describing steam) in order to provide efficient cooking (abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the Lang reference, to include in which the first gaseous medium is humid water vapor, in which the first gaseous medium is saturated water vapor, and in which the second gaseous medium is overheated water vapor, as suggested and taught by Williams, for the purpose of providing efficient cooking. The modification merely involves combining prior art elements according to known methods to yield predictable results. One would be motivated to combine Lang with Williams because Williams teaches an endless conveyor for conveying food while using steam cooking that uses humid water vapor, 100% humidity and overheated water vapor to provide more efficient cooking and the endless conveyor for conveying food of Lang could be similarly improved by using humid water vapor and steam at 100% humidity, thus allowing the endless conveyor to additionally be used for cooking food for greater functionality while reducing energy use by achieving more efficient cooking.

20. Claims 8, 9, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onodera (US 4,118,181) as applied to claims 1 and 13 above, and further in view of Hwang (US 5,078,120 previously cited).

21. In regards to claims 8, 9, and 14, Onodera discloses the claimed invention, except for in which lateral pieces at a longitudinal edge of the conveyor belt form an outer wall of the stack, which defines the stack outwards in the radial direction, in which lateral pieces at a longitudinal edge of the conveyor belt form an inner wall of the stack which defines the stack inwards in the radial direction to define said central space, and in which the housing further comprises a drain for draining off condensed water vapor. However, Hwang teaches in which lateral pieces (102,

fig. 9, col. 5, lines 25-52 describing the conveyor belt including lateral pieces 102 to support the super-imposed, helically extending tiers while allowing transverse flow through apertures 106) at a longitudinal edge of a conveyor belt (28, fig. 9) form an outer wall of a stack (fig. 1), which defines the stack outwards in the radial direction (fig. 1), in which lateral pieces (102, fig. 9) at a longitudinal edge of a conveyor belt (28, fig. 9) form an inner wall of a stack (fig. 1) which defines the stack inwards in the radial direction to define a central space (fig. 1), and in which the housing further comprises a drain (52, fig. 4, "drainage channel 52" col. 8, lines 24-29 describing a drain 52 for continuously draining drippings from food which would inherently include condensed water vapor) for draining off condensed water vapor in order to support the super-imposed, helically extending tiers of the conveyor belt (col. 5, lines 25-52) and to drain off drippings (col. 8, lines 24-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the Onodera reference, to include in which lateral pieces at a longitudinal edge of the conveyor belt form an outer wall of the stack, which defines the stack outwards in the radial direction, in which lateral pieces at a longitudinal edge of the conveyor belt form an inner wall of the stack which defines the stack inwards in the radial direction to define said central space, and in which the housing further comprises a drain for draining off condensed water vapor, as suggested and taught by Hwang, for the purpose of supporting the super-imposed, helically extending tiers of the conveyor belt and draining off drippings. The modification merely involves combining prior art elements according to known methods to yield predictable results. One would be motivated to combine Onodera with Hwang because Hwang teaches a helical conveyor stack for processing foodstuffs having lateral pieces of the conveyor belt to provide support and a drain enabling draining for removing liquids during

the processing of foodstuffs and the helical conveyor stack for processing foodstuffs of Onodera could be similarly improved by having lateral pieces to its conveyor belt and having a drain, thus better supporting the super-imposed, helically extending tiers of the conveyor belt so that it maintains its shape while enabling the removal of condensed water vapor that may contain bacteria or odorous liquids from the processing of foodstuffs.

22. Claims 2-4, 8, 9, 14, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lang (US 5,205,135) as applied to claims 1, 13, and 18 above, and further in view of Hwang (US 5,078,120).

23. In regards to claims 2-4, 8, 9, 14, and 19-21, Lang discloses the claimed invention, except for in which the first gaseous medium is humid water vapor, in which the first gaseous medium is saturated water vapor, in which the second gaseous medium is overheated water vapor, in which lateral pieces at a longitudinal edge of the conveyor belt form an outer wall of the stack, which defines the stack outwards in the radial direction, in which lateral pieces at a longitudinal edge of the conveyor belt form an inner wall of the stack which defines the stack inwards in the radial direction to define said central space, and in which the housing further comprises a drain for draining off condensed water vapor. However, Hwang teaches in which a first gaseous medium is humid water vapor (fig. 8 at 70, col. 11, lines 29-36 describing steam), in which a first gaseous medium is saturated water vapor (fig. 8 at 70, col. 11, lines 29-36 describing steam), in which a second gaseous medium is overheated water vapor (col. 9, lines 27-47 describing treating food in a steam environment of up to 450 degrees F and col. 11, line 53-col. 12, line 5 describing treating food in a steam environment at a temperature of up to 400 degrees F), in which lateral pieces (102, fig. 9, col. 5, lines 25-52 describing the conveyor belt including lateral

pieces 102 to support the super-imposed, helically extending tiers while allowing transverse flow through apertures 106) at a longitudinal edge of a conveyor belt (28, fig. 9) form an outer wall of a stack (fig. 1), which defines the stack outwards in the radial direction (fig. 1), in which lateral pieces (102, fig. 9) at a longitudinal edge of a conveyor belt (28, fig. 9) form an inner wall of a stack (fig. 1) which defines the stack inwards in the radial direction to define a central space (fig. 1), and in which the housing further comprises a drain (52, fig. 4, "drainage channel 52" col. 8, lines 24-29 describing a drain 52 for continuously draining drippings from food which would inherently include condensed water vapor) for draining off condensed water vapor in order to provide a gaseous cooking medium that achieves varying cooking characteristics (fig. 1, col. 9, lines 27-47 and col. 11, line 53-col. 12, line 5), to support the super-imposed, helically extending tiers of the conveyor belt (col. 5, lines 25-52), and to drain off drippings (col. 8, lines 24-29). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the Lang reference, to include in which the first gaseous medium is humid water vapor, in which the first gaseous medium is saturated water vapor, in which the second gaseous medium is overheated water vapor, in which lateral pieces at a longitudinal edge of the conveyor belt form an outer wall of the stack, which defines the stack outwards in the radial direction, in which lateral pieces at a longitudinal edge of the conveyor belt form an inner wall of the stack which defines the stack inwards in the radial direction to define said central space, and in which the housing further comprises a drain for draining off condensed water vapor, as suggested and taught by Hwang, for the purpose of providing a gaseous cooking medium that achieves varying processing characteristics, supporting the super-imposed, helically extending tiers of the conveyor belt and draining off drippings. The modification merely involves

combining prior art elements according to known methods to yield predictable results. One would be motivated to combine Lang with Hwang because Hwang teaches a helical conveyor stack for processing foodstuffs enabling varying processing by using humid water vapor, saturated water vapor, and overheated water vapor, having lateral pieces of the conveyor belt to provide support, and a drain for removing liquids during the processing of foodstuffs and the helical conveyor stack for processing foodstuffs of Lang could be similarly improved by using gaseous mediums of humid water vapor, saturated water vapor, and overheated water vapor, by having lateral pieces to its conveyor belt, and having a drain, thus enabling the processing of a wider range of foodstuffs, better supporting the super-imposed, helically extending tiers of the conveyor belt so that it maintains its shape, and removing condensed water vapor that may contain bacteria or odorous liquids from the processing of foodstuffs.

24. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onodera (US 4,118,181) as applied to claim 1 above, and further in view of Astrom (US 3,412,476 previously cited) or Fenty (US 5,247,810 previously cited).

25. In regards to claims 15 and 17, Onodera discloses the claimed invention, except for in which said outer and inner circumferential walls have the same height and in which said outer and inner circumferential walls extend along the full height of the stack, whereby both walls have openings or perforations along a portion of the stack. However, Astrom teaches in which an outer (12, fig. 3) and inner (3, fig. 3) circumferential walls have the same height and in which outer (12, fig. 3) and inner (3, fig. 3) circumferential walls extend along the full height of a stack (1, fig. 3), whereby both walls have openings (16, fig. 3, col. 2, lines 27-44 describing the outer wall 12 and inner wall 3 having openings 16 so that air can pass through as represented by the

single arrows where the location of the openings is determined from case to case to gain the best effect) along a portion of the stack in order to provide greater control over the flow of air between the inner and outer walls so that the best effect is gained (col. 2, lines 27-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the Onodera reference, to include in which said outer and inner circumferential walls have the same height and in which said outer and inner circumferential walls extend along the full height of the stack, whereby both walls have openings along a portion of the stack, as suggested and taught by Astrom, for the purpose of providing greater control over the flow of air between the inner and outer walls so that the best effect is gained. The modification merely involves combining prior art elements according to known methods to yield predictable results. One would be motivated to combine Onodera with Astrom because Astrom teaches a spiral conveyor stack for processing foodstuffs (Astrom, "foodstuffs" col. 1, line 13) having inner and outer circumferential walls extending the full height of the stack, whereby both walls (col. 2, lines 39-44) have openings along a portion of the stack for greater control over the flow of air between the inner and outer walls so that the best effect is gained and the spiral conveyor stack for processing foodstuffs having inner and outer circumferential walls of Onodera could be similarly improved by having the walls extend the full height of the stack while having openings for the flow of air at desired air flow locations, thus allowing for greater control over the flow of air between its walls to better achieve the best effect in processing foodstuffs.

In the alternative, Fenty teaches in which outer (106, fig. 4) and inner (104, fig. 4) circumferential walls have the same height and in which outer (106, fig. 4) and inner (104, fig. 4)

circumferential walls extend along the full height of the stack, whereby both walls have openings (fig. 4 showing openings between the floor and the bottom of the walls 106, 104) along a portion of the stack in order to better support the conveyor (col. 5, lines 22-31) and to better direct air flow. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the Onodera reference, to include in which said outer and inner circumferential walls have the same height and in which said outer and inner circumferential walls extend along the full height of the stack, whereby both walls have openings along a portion of the stack, as suggested and taught by Fenty, for the purpose of better supporting the conveyor and better directing air flow. The modification merely involves combining prior art elements according to known methods to yield predictable results. One would be motivated to combine Onodera with Fenty because Fenty teaches a helical food conveyor having inner and outer walls having the same height and extending the length of the stack while having openings for better supporting the conveyor and better directing air flow and the helical food conveyor having inner and outer walls of Onodera could be similarly improved by having its inner and outer walls have the same height and extend the length of the stack while having openings, thus better supporting the conveyor so that it maintains its shape and better directing the air flow.

26. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lang (US 5,205,135) as applied to claim 1 above, and further in view of Astrom (US 3,412,476).

27. In regards to claims 15-17, Lang discloses the claimed invention including said inner circumferential wall (15j, fig. 3) extends vertically along a portion of the stack, except for in which said outer and inner circumferential walls have the same height, in which said outer circumferential wall extends vertically along the full height of the stack, whereby said outer

circumferential wall optionally has openings or perforations along the portion of the stack not covered by the inner circumferential wall, and in which said outer and inner circumferential walls extend along the full height of the stack, whereby both walls have openings or perforations along a portion of the stack. However, Astrom teaches in which outer (12, fig. 3) and inner (3, fig. 3) circumferential walls have the same height, in which an outer circumferential wall (12, fig. 3) extends vertically along the full height of a stack, whereby said outer circumferential wall (12, fig. 3) optionally has openings (16, fig. 3, col. 2, lines 27-44 describing the outer wall 12 having openings 16 so that air can pass through as represented by the single arrows where the location of the openings is determined from case to case to gain the best effect) along the portion of the stack not covered by the inner circumferential wall (where Lang discloses the inner circumferential wall which extends for a portion of the stack), and in which outer (12, fig. 3) and inner (3, fig. 3) circumferential walls extend along the full height of the stack (1, fig. 3), whereby both walls have openings (16, fig. 3, col. 2, lines 27-44 describing the outer wall 12 and inner wall 3 having openings 16 so that air can pass through as represented by the single arrows where the location of the openings is determined from case to case to gain the best effect) along a portion of the stack in order to provide greater control over the flow of air between the inner and outer walls so that the best effect is gained (col. 2, lines 27-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to modify the Lang reference, to include in which said outer and inner circumferential walls have the same height, in which said outer circumferential wall extends vertically along the full height of the stack, whereby said outer circumferential wall optionally has openings along the portion of the stack not covered by the inner circumferential wall, and in which said outer and inner circumferential

walls extend along the full height of the stack, whereby both walls have openings along a portion of the stack, as suggested and taught by Astrom, for the purpose of providing greater control over the flow of air between the inner and outer walls so that the best effect is gained. The modification merely involves combining prior art elements according to known methods to yield predictable results. One would be motivated to combine Lang with Astrom because Astrom teaches a spiral conveyor stack for processing foodstuffs (Astrom, "foodstuffs" col. 1, line 13) having inner and outer circumferential walls extending the full height of the stack, whereby both walls (col. 2, lines 39-44) have openings along a portion of the stack for greater control over the flow of air between the inner and outer walls so that the best effect is gained and the spiral conveyor stack for processing foodstuffs having inner and outer circumferential walls of Lang could be similarly improved by having one or both walls extend the full height of the stack while having openings for the flow of air at desired air flow locations, thus allowing for greater control over the flow of air between its walls to better achieve the best effect in processing foodstuffs.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey J. Hall whose telephone number is (571)270-7833. The examiner can normally be reached on Monday - Friday, 9AM to 5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Rinehart can be reached on (571)272-4881. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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